UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,361	04/29/2004	Eric A. Foreman	BUR920040075US1	3360

7590	03/06/2006	EXAMINER

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ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Advisory Action **Before the Filing of an Appeal Brief**	Application No. 10/709,361	Applicant(s) FOREMAN ET AL.	
	Examiner Toan M. Le	Art Unit 2863	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED <u>15 February 2006</u> FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

  a) ☐ The period for reply expires _____months from the mailing date of the final rejection.

  b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

    Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

<u>NOTICE OF APPEAL</u>

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

<u>AMENDMENTS</u>

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will <u>not</u> be entered because

  (a)☐ They raise new issues that would require further consideration and/or search (see NOTE below);

  (b)☐ They raise the issue of new matter (see NOTE below);

  (c)☒ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

  (d)☐ They present additional claims without canceling a corresponding number of finally rejected claims.

    NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5. ☐ Applicant's reply has overcome the following rejection(s): _____.

6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

  The status of the claim(s) is (or will be) as follows:

  Claim(s) allowed: <u>13-22</u>.

  Claim(s) objected to: <u>3-8,11,25 and 27</u>.

  Claim(s) rejected: <u>1,2,9,10,12,23,24,26 and 28-34</u>.

  Claim(s) withdrawn from consideration: _____.

<u>AFFIDAVIT OR OTHER EVIDENCE</u>

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will <u>not</u> be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will <u>not</u> be entered because the affidavit or other evidence failed to overcome <u>all</u> rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).

10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

<u>REQUEST FOR RECONSIDERATION/OTHER</u>

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: <u>Please See Attachment.</u>

12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____.

13. ☐ Other: _____.

Referring to claims 1 and 31, Applicant argues that "Instead, Orshansky shows methods and theorems for determining statistical estimates of timing of circuits. The Orshansky approach is entirely probabilistic, seeking to construct the probability distribution of an achievable clock period for a given circuit (page 556, col. 2). Orshansky discloses that the delay of any gate can be expressed as an arbitrary function. In order to establish an expression for the pair-wise covariance of gate delays, Orshansky assumes that the arbitrary function can be expressed as a first order Taylor expansion (page 558, col. 1). Contrary to the examiner's assertion, expressing an arbitrary function as a Taylor expansion does not constitute deriving an adjusting timing slack for the at least one set of racing paths by at least partially cancelling delay contributions from grouped elements having similar delay characteristics, as recited in claims 1 and 31. Expressing an arbitrary function as a Taylor expansion has absolutely nothing to do with deriving an adjusted timing slack, much less, doing so by at least partially cancelling delay contributions from grouped elements having similar delay characteristics. A Taylor expansion (also commonly referred to as a Taylor series) is a mathematical expression and, more specially, is a power series expansion of a function about a point. This power series expansion of the function is an approximation of the function that allows for easier computation when using the function. This is not a cancellation function as recited in the claimed invention."

Referring Claims 1 and 31, Orshansky discloses: identifying at least one set of racing paths within the integrated circuit, the at least one set of racing paths including an early path and a late path (page 557, col. 2, section 4.2: paragraph 1, equations 1-2); identifying at least one delay characteristic of one or more elements in the early path and at least one delay characteristic of one or more elements in the late path (page 558, col. 1, lines 3-16); grouping ones of the one or more elements in the early path with ones of the one or more elements in the late path having similar delay characteristics (page 557, col. 2, section 4.2, paragraphs 2 and 3; page 558, col. 1, paragraph 2, equations 3-5); and deriving an adjusted timing slack for the at least one set of racing paths by at least partially canceling delay contributions from grouped elements having similar delay characteristics (page 558, col. 1, lines 17-29; equations 4-5).

Orshansky discloses "the cumulative probability function of max (D1...Dn) is given by F9t) = P{max{D1...Dn} < t}, or equivalent: F(t) = P{D1 < t, D2 < t, ..., Dn < t} where F(t) is the cumulative probability function defined over the path delay probability space." (page 557, section 4.1)

Thus, Orshansky discloses the steps of identifying and grouping.
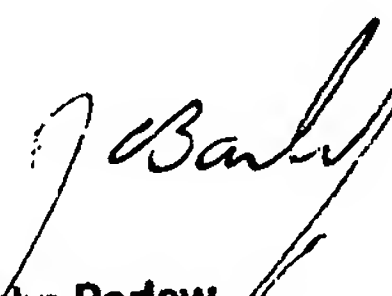
Orshansky also discloses "Let the delay of a gate be given by an arbitrary function dg = f(L). In order to establish an expression for the pair-wise covariances of gate delay, we assume the linearity of delay response to the localized variation of process parameters. In other words, we assume that a first order taylor expansion of the gate delay function is adaquate." (page 558, col. 1, lines 17-23)

Thus, Orshansky discloses the step of deriving an adjusted timing slackby using the first order approximation.

As to claim 23, Applicant argues that "There is no mention of computing a variation, much less of computing a variation by using location information."

Orshansky discloses "the cumulative probability function of max (D1...Dn) is given by F9t) = P{max{D1...Dn} < t}, or equivalent: F(t) = P{D1 < t, D2 < t, ..., Dn < t} where F(t) is the cumulative probability function defined over the path delay probability SPACE." (page 557, section 4.1)

Therefore, Orshansky does disclose the limitation in claim 23 in the step of identifying, determining, computing, and deriving using the location information.

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